

Translation

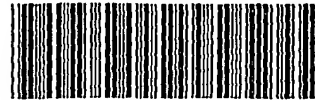
PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

PCT Application
PCT/JP2002/008071



Applicant's or agent's file reference RDC39M/PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP02/08071	International filing date (day/month/year) 07 August 2002 (07.08.02)	Priority date (day/month/year) 14 February 2002 (14.02.02)
International Patent Classification (IPC) or national classification and IPC B01J 35/02, 27/24, C01G 23/00 // C01B 3/04, 13/02		
Applicant JAPAN SCIENCE AND TECHNOLOGY CORPORATION		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 9 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 12 May 2003 (12.05.03)	Date of completion of this report 04 August 2003 (04.08.2003)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP02/08071

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
 pages 1-4, 7-8, 11-19, as originally filed
 pages _____, filed with the demand
 pages 5, 5/1, 6, 6/1, 9, 10, filed with the letter of 22 July 2003 (22.07.2003)
- ☒ the claims:
 pages 2-4, 6, 8, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages 1, 5, 7, 9, 10, filed with the letter of 22 July 2003 (22.07.2003)
- ☒ the drawings:
 pages 1-27, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1-10	YES
	Claims		NO
Inventive step (IS)	Claims	1-10	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims		NO

2. Citations and explanations

The inventions set forth in claims 1-10 are not disclosed in any of the documents cited in the international search report, and are novel.

The photocatalysts which include titanium fluoro-nitride represented by $\text{Ti(IV)O}_a\text{N}_b\text{F}_c$, catalysts for photohydrolysis comprising said photocatalysts and process for producing said photocatalysts claimed in claims 1-10 are not disclosed in any document and are also not obvious.

The inventions set forth in claims 1-10 also involve an inventive step relative to all of the documents cited in the international search report.

A person skilled in the art could not easily deduce the aforementioned constitutional feature.

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VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claims 1-8 claim a "photocatalyst which includes a titanium fluoronitride represented by $\text{MeTi(IV)O}_a\text{N}_b\text{F}_c$ doped with at least one metal Me selected from a set comprising alkali and alkaline earth metals (where b is 0.1-1, c is 0.1-1 and a is a value giving T(IV), decided in association with a and b)".

However, the description states that "Me is an alkaline earth metal such as Sr (description, page 4), the examples only describe the use of Sr, and no clear statement is presented of the grounds that "alkali" metals are the same as alkaline earth metals in photocatalysts which include a titanium fluoronitride.

Therefore, the inventions set forth in claims 1-8 are not fully supported by the description.